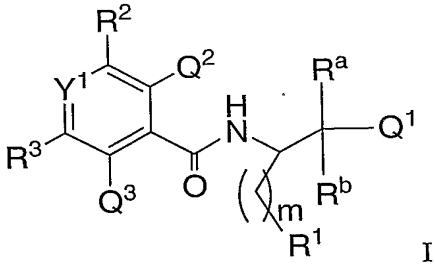
WHAT IS CLAIMED IS:

1. A compound of formula (I):



I

wherein

Y^1 is CH or N;

Q^1 is selected from the group consisting of

(1) –OH, and

(2) $–NH_2$;

Q^2 and Q^3 independently selected from the group consisting of

(1) hydrogen, and

(2) halogen;

R^a is selected from the group consisting of

(1) hydrogen,

(2) $–C_{1-10}$ alkyl, wherein said alkyl is unsubstituted or substituted with one or more fluoro, and

(3) $–C_{3-8}$ cycloalkyl;

R^b is selected from the group consisting of

(1) hydrogen,

(2) $–C_{1-10}$ alkyl,

(3) $–C_{1-3}$ alkyl-aryl, wherein said aryl is selected from the group consisting of phenyl and naphthyl,

(4) $–C_{3-8}$ cycloalkyl,

wherein said cycloalkyl, alkyl and aryl are unsubstituted or substituted with

one or more
(a) halo,
(b) –OH,
(c) –CN,
(d) –O–C_{1-10} alkyl,

(5) –$(CH_2)_n$-NR^cR^d wherein R^c and R^d are selected from the group consisting of hydrogen and C_{1-10} alkyl, and n is 2, 3 or 4, and
(6) –$(CH_2)_{n'}$-O-R^e , wherein R^e is selected from the group consisting of
(a) C_{1-10} alkyl,
(b) –C_{0-3} alkyl-aryl, wherein said aryl is selected from the group consisting of phenyl and naphthyl,
wherein said alkyl and aryl are unsubstituted or substituted with one or more
(i) halo,
(ii) –OH,
(iii) –CN,
(iv) –O–C_{1-10} alkyl,

and n' is 1, 2, 3 or 4;

m is 1 or 2;

R^1 is (1) aryl selected from the group consisting of phenyl and napthyl, or
(2) heteroaryl selected from the group consisting of pyrazinyl, pyrazolyl, pyridazinyl, pyridyl, pyrimidinyl, pyrrolyl, tetrazolyl, furanyl, imidazolyl, triazinyl, pyranyl, thiazolyl, thienyl, thiophenyl, triazolyl, oxazolyl, isoxazolyl, thiazolyl, oxadiazolyl, indolyl, quinolinyl, isoquinolinyl, benzimidazolyl and benzoxazolyl,
(3) -C_{1-10} alkyl, and
(4) -C_{3-8} cycloalkyl,
wherein said aryl, heteroaryl, alkyl and cycloalkyl is unsubstituted or substituted with one or more
(a) halo,
(b) –OH,
(c) –CN,

(d) –O–C_{1-10} alkyl,
(e) –C_{1-10} alkyl,
(f) –C_{3-8} cycloalkyl,
(g) aryl selected from the group consisting of phenyl and napthyl, or
(h) heteroaryl selected from the group consisting of pyrazinyl, pyrazolyl, pyridazinyl, pyridyl, pyrimidinyl, pyrrolyl, tetrazolyl, furanyl, imidazolyl, triazinyl, pyranyl, thiazolyl, thienyl, thiophenyl, triazolyl, oxazolyl, isoxazolyl, thiazolyl, oxadiazolyl, indolyl, quinolinyl, isoquinolinyl, benzimidazolyl and benzoxazolyl;

R^2 is selected from the group consisting of:
(1) $(R^4\text{-}SO_2)N(R^7)$-, wherein R^4 is
(a) -C_{1-10} alkyl,
(b) –C_{3-8} cycloalkyl,
wherein said alkyl and cycloalkyl is unsubstituted or substituted with one or more
(i) halo,
(ii) –OH,
(iii) –CN,
(iv) –O-C_{1-10} alkyl,
(v) -C_{1-10} alkyl,
(vi) –C_{3-8} cycloalkyl,
(vii) aryl selected from the group consisting of phenyl and napthyl, or
(viii) heteroaryl selected from the group consisting of pyrazinyl, pyrazolyl, pyridazinyl, pyridyl, pyrimidinyl, pyrrolyl, tetrazolyl, furanyl, imidazolyl, triazinyl, pyranyl, thiazolyl, thienyl, thiophenyl, triazolyl, oxazolyl, isoxazolyl, thiazolyl, oxadiazolyl, indolyl, quinolinyl, isoquinolinyl, benzimidazolyl and benzoxazolyl;

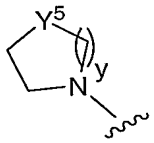
and said aryl and heteroaryl is unsubstituted or substituted with one or more
(A) halo,
(B) –OH,
(C) –CN,
(D) –O-C_{1-10} alkyl,

(E) –C_{3-8} cycloalkyl, or
(F) -C_{1-10} alkyl,

(c) heteroaryl selected from the group consisting of pyrazinyl, pyrazolyl, pyridazinyl, pyridyl, pyrimidinyl, pyrrolyl, tetrazolyl, furanyl, imidazolyl, triazinyl, pyranyl, thiazolyl, thienyl, thiophenyl, triazolyl, oxazolyl, isoxazolyl, thiazolyl, oxadiazolyl, indolyl, quinolinyl, isoquinolinyl, benzimidazolyl and benzoxazolyl,

wherein said heteroaryl is unsubstituted or substituted with one or more
(i) halo,
(ii) –OH,
(iii) –CN,
(iv) –O-C_{1-10} alkyl,
(v) –C_{3-8} cycloalkyl, or
(vi) -C_{1-10} alkyl,

(d) –$(CH_2)_x$-NR^fR^g wherein R^f and R^g are selected from the group consisting of hydrogen and C_{1-10} alkyl, and x is 0, 1, 2, 3 or 4, or R^f and R^g, together with the nitrogen atom to which they are attached form the group



wherein y is 1 or 2, Y^5 is –CHR^{21}, –O– or NR^{21}, wherein R^{21} is selected from the group consisting of;
(i) hydrogen, and
(ii) C_{1-10} alkyl,
wherein said alkyl is unsubstituted or substituted with one or more
(A) halo,
(B) –OH,
(C) –CN,

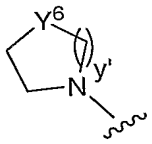
(D) –O–C_{1-10} alkyl, or
(E) –C_{3-8} cycloalkyl;

R^7 is selected from the group consisting of
(a) hydrogen, and
(b) –C_{1-10} alkyl,
(c) aryl selected from the group consisting of phenyl and napthyl, or
(d) heteroaryl selected from the group consisting of pyrazinyl, pyrazolyl, pyridazinyl, pyridyl, pyrimidinyl, pyrrolyl, tetrazolyl, furanyl, imidazolyl, triazinyl, pyranyl, thiazolyl, thienyl, thiophenyl, triazolyl, oxazolyl, isoxazolyl, thiazolyl, oxadiazolyl, indolyl, quinolinyl, isoquinolinyl, benzimidazolyl and benzoxazolyl

wherein said alkyl, aryl and heteroaryl is unsubstituted or substituted with one or more
(i) halo,
(ii) –OH,
(iii) –CN,
(iv) –O–C_{1-10} alkyl,
(v) –C_{3-8} cycloalkyl,
(vi) aryl selected from the group consisting of phenyl and napthyl, or
(vii) heteroaryl selected from the group consisting of pyrazinyl, pyrazolyl, pyridazinyl, pyridyl, pyrimidinyl, pyrrolyl, tetrazolyl, furanyl, imidazolyl, triazinyl, pyranyl, thiazolyl, thienyl, thiophenyl, triazolyl, oxazolyl, isoxazolyl, thiazolyl, oxadiazolyl, indolyl, quinolinyl, isoquinolinyl, benzimidazolyl and benzoxazolyl,

wherein said cycloalkyl, aryl or heteroaryl is unsubstituted or substituted with one or more
(A) halo,
(B) –OH,
(C) –CN,
(D) –O-C_{1-10} alkyl,
(E) –C_{3-8} cycloalkyl, or
(F) aryl selected from the group consisting of phenyl and napthyl;

(e) $-(CH_2)_{y'}-NR^hR^i$ wherein R^h and R^i are selected from the group consisting of hydrogen and C_{1-10} alkyl, and y' is 1, 2, 3 or 4, or or R^h and R^i, together with the nitrogen atom to which they are attached from the group



wherein y' is 1 or 2, Y^6 is $-CHR^{22}$, –O– or NR^{22}, wherein R^{22} is selected from the group consisting of;

(i) hydrogen, and

(ii) C_{1-10} alkyl,

wherein said alkyl is unsubstituted or substituted with one or more

(A) halo,

(B) –OH,

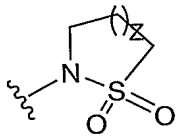
(C) –CN,

(D) $-O-C_{1-10}$ alkyl, or

(E) $-C_{3-8}$ cycloalkyl,

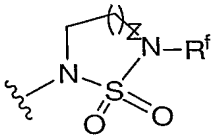
or R^4 and R^7 are linked together to form the group

(a)



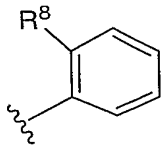
wherein z is 1, 2 or 3; or

(b)



wherein z is 1, 2 or 3

(2)



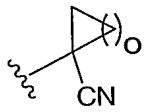
wherein R^8 is selected from the group consisting of

(a) –CN,

(b) hydrogen, and

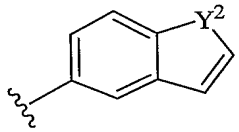
(c) tetrazolyl;

(3)



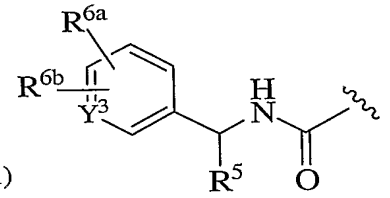
wherein o is 1, 2, 3 or 4; and

(4)

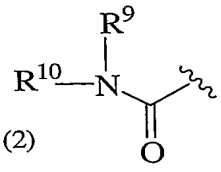


wherein Y^2 is –NH=CH- or –CH=NH-;

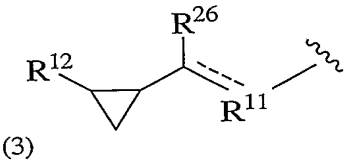
R^3 is selected from the group consisting of



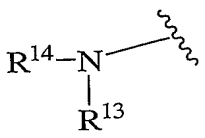
(1) ;



(2) ;



(3) ; and



(4)

wherein Y^3 is CR^{6c} or N;

R^5 is C_{1-10} alkyl or C_{1-2} perfluoroalkyl;

R^{6a}, R^{6b}, and R^{6c} are independently selected from the group consisting of:

(1) hydrogen,
(2) halo,
(3) $-C_{1-10}$ alkyl,
(4) –OH,
(5) –CN,
(6) $-C_{3-8}$ cycloalkyl, and
(7) $-O-C_{1-10}$ alkyl;

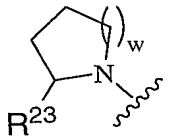
R^9 and R^{10} are independently selected from the group consisting of

(1) hydrogen,
(2) $-C_{1-10}$ alkyl, and
(3) $-C_{3-8}$ cycloalkyl,

wherein said alkyl and cycloalkyl are unsubstituted or substituted with one or more

(a) halo,
(b) –OH,
(c) –CN,
(d) $-O-C_{1-10}$ alkyl,
(e) $-C_{3-8}$ cycloalkyl, and
(f) $-NR^j R^k$ wherein R^j and R^k are C_{1-10} alkyl;

or R^9 and R^{10} are joined together with the nitrogen atom to which they are attached to form



wherein w is 1, 2 or 3, and

R^{23} is selected from the group consisting of

(a) hydrogen,
(b) -C_{1-10} alkyl,
(c) –C_{3-8} cycloalkyl,
(d) –C_{2-10} alkenyl,
(e) –C_{2-10} alkynyl,
(f) -$(CH_2)_p$-phenyl,
(g) -$(CH_2)_p$-heteroaryl, wherein said heteroaryl is selected from the group consisting of pyrazinyl, pyrazolyl, pyridazinyl, pyridyl, pyrimidinyl, pyrrolyl, tetrazolyl, furanyl, imidazolyl, triazinyl, pyranyl, thiazolyl, thienyl, thiophenyl, triazolyl, oxazolyl, isoxazolyl, thiazolyl, oxadiazolyl, indolyl, quinolinyl, isoquinolinyl, benzimidazolyl and benzoxazolyl,

wherein p is 0 or 1, and

wherein said alkyl, alkenyl, alkynyl, cycloalkyl, phenyl and heteroaryl is unsubstituted or substituted with one or more

(i) halo,
(ii) –C_{1-10} alkyl,
(iii) –OH,
(iv) –CN,
(v) –C_{3-8} cycloalkyl, or
(vi) –O-C_{1-10} alkyl;

R^{11} is selected from the group consisting of

(1) –CH–
(2) –CH_2–,
(3) –O–, and
(4) –NR^{17}–,

provided that when R^{11} is –CH– the dotted line forms a bond and when R^{11} is –CH_2–, –O– or –NR^{17}– the dotted line is absent;

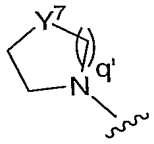
R^{17} is hydrogen or C_{1-10} alkyl, wherein said C_{1-10} alkyl is unsubstituted or substituted with one or more

(a) halo,
(b) –OH,
(c) –CN,
(d) –C_{3-8} cycloalkyl,
(e) –O-C_{1-10} alkyl,
(f) –$(CH_2)_q$-phenyl, wherein q is 1 or 2, and
(g) -$NR^{18}R^{19}$, and

wherein R^{18} and R^{19} are independently selected from the group consisting of

(i) hydrogen, or
(ii) C_{1-10} alkyl;

or R^{18} and R^{19}, together with the nitrogen atom to which they are attached, form the group



wherein q' is 1 or 2, Y^7 is –CHR^{24}, –O– or NR^{24}, wherein R^{24} is selected from the group consisting of;

(c) hydrogen, and
(d) C_{1-10} alkyl,

wherein said alkyl is unsubstituted or substituted with one or more

(i) halo,
(ii) –OH,
(iii) –CN,
(iv) –O–C_{1-10} alkyl, or
(v) –C_{3-8} cycloalkyl;

R^{26} is selected from the group consisting of

(1) hydrogen,
(2) -C_{1-3} alkyl;

R^{12} is selected from the group consisting of

(1) hydrogen,

(2) -C_{1-10} alkyl, wherein said alkyl is unsubstituted or substituted with one or more

(a) halo,

(b) –OH,

(c) –CN,

(d) –C_{3-8} cycloalkyl,

(e) –O-C_{1-10} alkyl, or

(f) –NH_2,

(3) halo,

(4) –C_{3-8} cycloalkyl,

(5) aryl selected from the group consisting of phenyl and napthyl, and

(6) heteroaryl selected from the group consisting of pyrazinyl, pyrazolyl, pyridazinyl, pyridyl, pyrimidinyl, pyrrolyl, tetrazolyl, furanyl, imidazolyl, triazinyl, pyranyl, thiazolyl, thienyl, thiophenyl, triazolyl, oxazolyl, isoxazolyl, thiazolyl, oxadiazolyl, indolyl, quinolinyl, isoquinolinyl, benzimidazolyl and benzoxazolyl,

wherein said aryl and heteroaryl is unsubstituted or substituted with one or more

(a) halo,

(b) –OH,

(c) –CN,

(d) –O-C_{1-10} alkyl,

(e) –C_{3-8} cycloalkyl, or

(f) -C_{1-10} alkyl;

R^{13} is selected from the group consisting of

(1) hydrogen,

(2) C_{1-10} alkyl, and

(3) –C_{3-8} cycloalkyl;

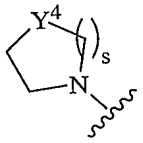
wherein said alkyl and cycloalkyl is unsubstituted or substituted with one or more

(a) halo,

(b) –OH,

(c) –CN,
(d) –C_{3-8} cycloalkyl,
(e) –O-C_{1-10} alkyl, and
(f) –C_{1-10} alkyl;

R^{14} is selected from the group consisting of
(1) -C_{1-10} alkyl, and
(2) –C_{3-8} cycloalkyl;
wherein said alkyl and cycloalkyl is unsubstituted or substituted with one or more
(a) halo,
(b) –OH,
(c) –CN,
(d) –C_{3-8} cycloalkyl,
(e) –O-C_{1-10} alkyl, or
(f) –C_{1-10} alkyl;
(3) -$(CH_2)_v$-$NR^{15}R^{16}$, wherein v is 2, 3 or 4, and
wherein R^{15} and R^{16} are independently selected from the group consisting of
a) hydrogen, or
b) C_{1-10} alkyl, wherein said C_{1-10} alkyl is unsubstituted or substituted with one or more
(i) halo,
(ii) –OH,
(iii) –CN,
(iv) –C_{3-8} cycloalkyl, or
(v) –O-C_{1-10} alkyl;
or R^{15} and R^{16}, together with the nitrogen atom to which they are attached, form the group



wherein s is 1 or 2, Y^4 is -CHR^{24}-, -O- or -NR^{24}-, wherein R^{24} is selected from the group consisting of

(i) hydrogen, and

(ii) C_{1-10} alkyl,

wherein said alkyl is unsubstituted or substituted with one or more

(A) halo,

(B) –OH,

(C) –CN,

(D) –O-C_{1-10} alkyl, or

(E) –C_{3-8} cycloalkyl,

4) -$(CH_2)_r$-phenyl, wherein r is 1, 2, 3, or 4, and

wherein said phenyl is unsubstituted or substituted with one or more

(a) halo,

(b) –OH,

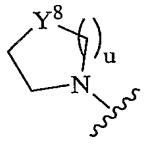
(c) –CN,

(d) –O-C_{1-10} alkyl,

(e) –C_{3-8} cycloalkyl, or

(f) -C_{1-10} alkyl;

or R^{13} and R^{14}, together with the nitrogen atom to which they are attached, form the group



wherein u is 1 or 2, Y^8 is -CHR^{25}-, -O- or -NR^{25}-, wherein R^{25} is selected from the group consisting of

(a) hydrogen,

(b) C_{1-10} alkyl,

(c) -$(CH_2)_t$-phenyl,

(d) -$(CH_2)_t$-heteroaryl, wherein said heteroaryl is selected from the group consisting of pyrazinyl, pyrazolyl, pyridazinyl, pyridyl, pyrimidinyl, pyrrolyl, tetrazolyl, furanyl, imidazolyl, triazinyl, pyranyl, thiazolyl, thienyl, thiophenyl, triazolyl, oxazolyl,

isoxazolyl, thiazolyl, oxadiazolyl, indolyl, quinolinyl, isoquinolinyl, benzimidazolyl and benzoxazolyl,

wherein t is 0 or 1, and

wherein said alkyl, phenyl and heteroaryl is unsubstituted or substituted with one or more

(i) halo,
(ii) $-C_{1-10}$ alkyl,
(iii) –OH,
(iv) –CN,
(v) $-C_{3-8}$ cycloalkyl, or
(vi) $-O-C_{1-10}$ alkyl;

and pharmaceutically acceptable salts thereof.

2. The compound of Claim 1 wherein R^a and R^b are both hydrogen.

3. The compound of Claim 1 wherein R^a is hydrogen and R^b is C_{1-10} alkyl.

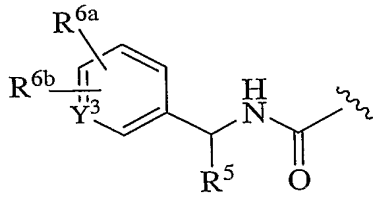
4. The compound of Claim 1 wherein m is 1 and R^1 is selected from the group consisting of

(1) phenyl, unsubstituted or substituted in one or two positions with halo; and
(2) thienyl.

5. The compound of Claim 1 wherein R^2 is $(R^4\text{-}SO_2)N(R^7)$-.

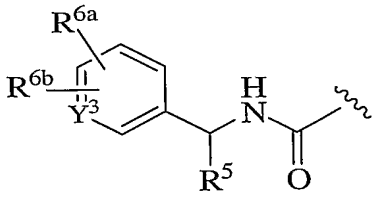
6. The compound of Claim 5 wherein R^4 and R^7 are each C_{1-6}alkyl.

7. The compound of Claim 1 wherein R^3 is (1)



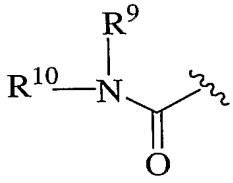
wherein Y^3 is CHR^{6c}, R^5 is methyl, R^{6a} and R^{6c} are hydrogen and R^{6b} is fluoro.

8. The compound of Claim 1 wherein R^3 is (1)

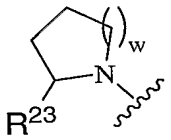


Y^3 is N, R^5 is C_{1-2} perfluoroalkyl, and R^{6a} and R^{6b} are hydrogen.

9. The compound of Claim 1 wherein R^3 is (2)



and R^9 and R^{10} are each unsubstituted C_{1-10} alkyl, or R^9 and R^{10} are joined together with the nitrogen atom to which they are attached to form attached to form

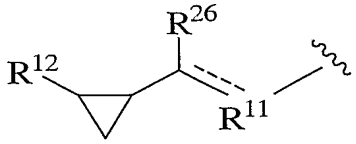


wherein w is 1;

R^{23} is $-(CH_2)_p$-phenyl or $-(CH_2)_p$-heteroaryl, wherein said heteroaryl is selected from the group consisting of pyrazinyl, pyrazolyl, pyridazinyl, pyridyl, pyrimidinyl, pyrrolyl, tetrazolyl, furanyl, imidazolyl, triazinyl, pyranyl, thiazolyl, thienyl, thiophenyl, triazolyl, oxazolyl, isoxazolyl, thiazolyl, oxadiazolyl, indolyl, quinolinyl, isoquinolinyl, benzimidazolyl and benzoxazolyl,

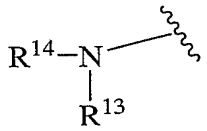
wherein the phenyl and heteroaryl are unsubstituted or substituted with one or more chloro, and p is 0.

10. The compound of Claim 1 wherein R^3 is (3)



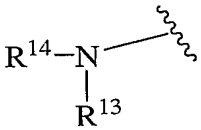
R^{11} is NR^{17} wherein R^{17} is hydrogen or C_{1-3} alkyl, and R^{12} is hydrogen or methyl.

11. The compound of Claim 1 wherein R^3 is (4)

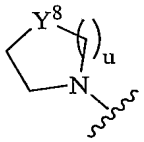


R^{13} is hydrogen and R^{14} is $-(CH_2)_v-NR^{15}R^{16}$ wherein v is 2 and R^{15} and R^{16} are each C_{1-10} alkyl, which is unsubstituted or substituted with –OH, -CN or $-OCH_3$.

12. The compound of Claim 1 wherein R^3 is (4)

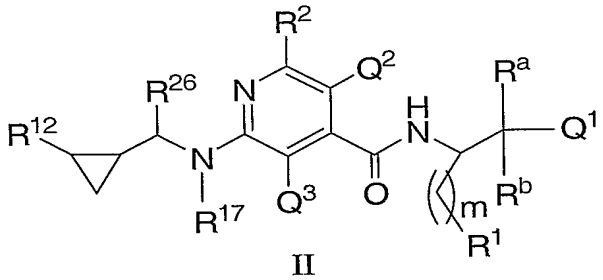


wherein R^{13} and R^{14}, together with the nitrogen atom to which they are attached, form the group



wherein u is 1 or 2, Y^8 is $-CHR^{25}-$, -O- or $-NR^{25}-$.

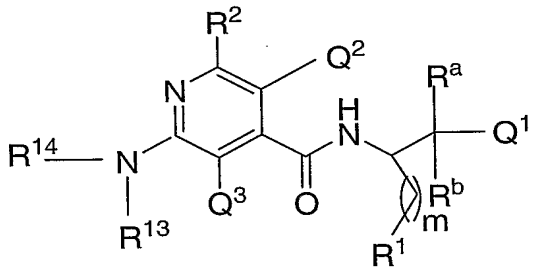
13. The compound of Claim 1 which is a compound of formula (II)



II

wherein Q^1, Q^2, Q^3, R^a, R^b, R^1, R^2, R^{12}, R^{17}, R^{26} and m are as defined in Claim 1, and pharmaceutically acceptable salts thereof.

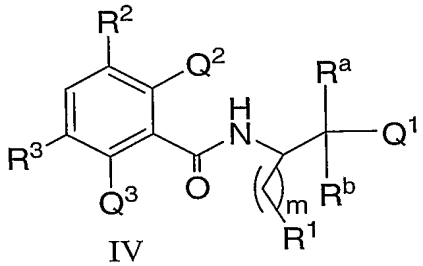
14. The compound of Claim 1 which is a compound of formula (III)



III

wherein Q^1, Q^2, Q^3, R^a, R^b, R^1, R^2, R^{13}, R^{14} and m are defined as in Claim 1, and pharmaceutically acceptable salts thereof.

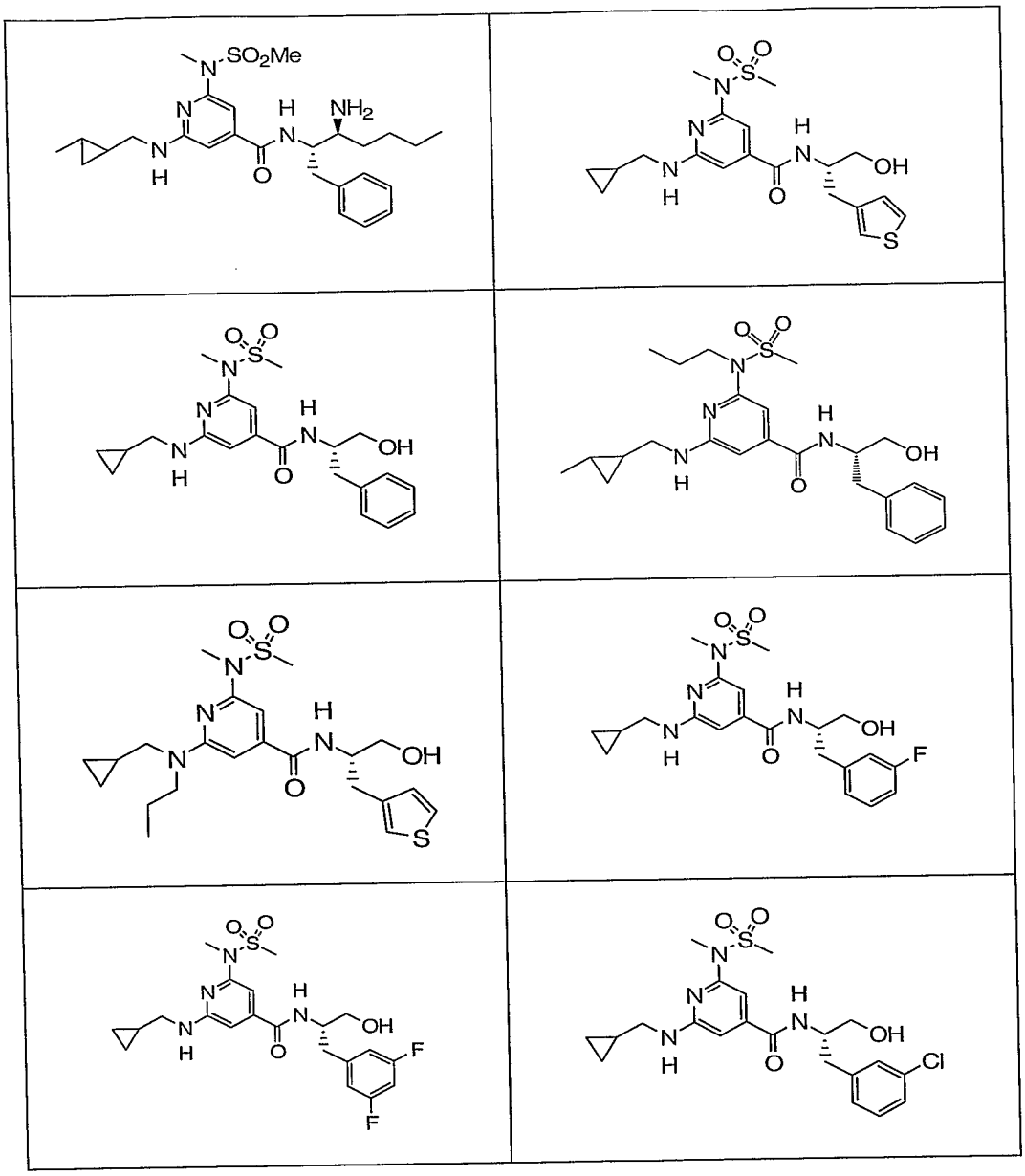
15. The compound of Claim 1 which is a compound of formula (IV):

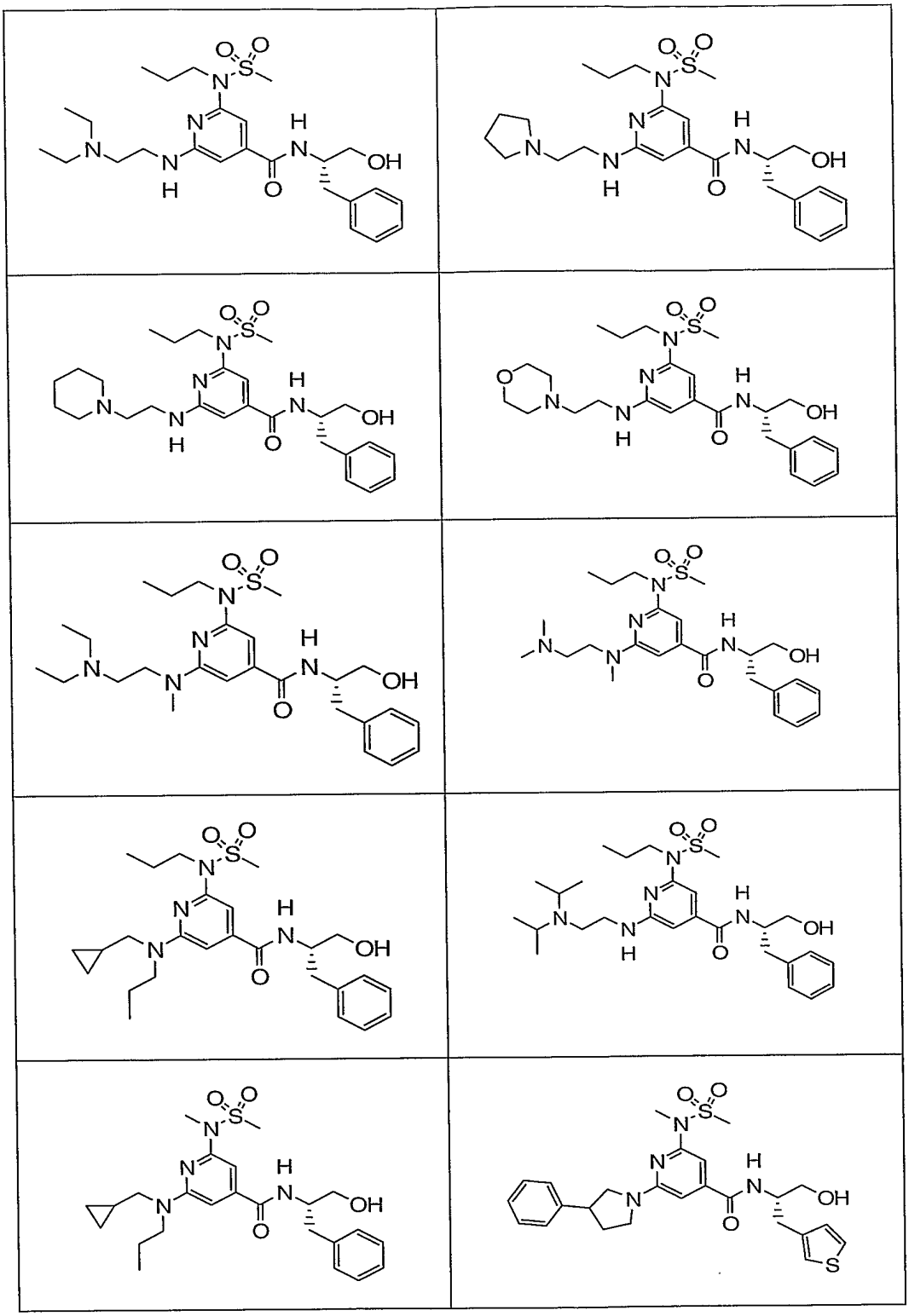


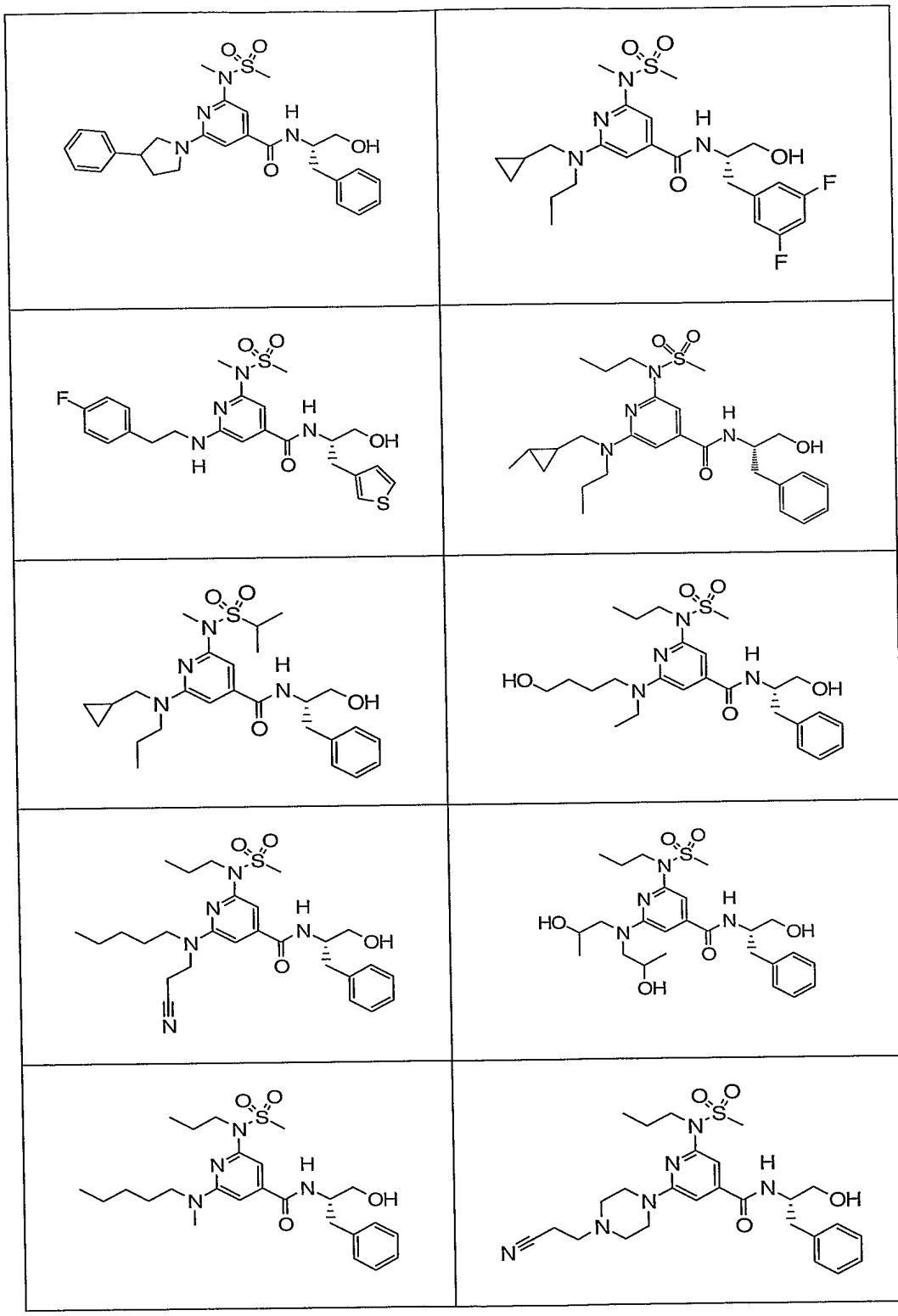
IV

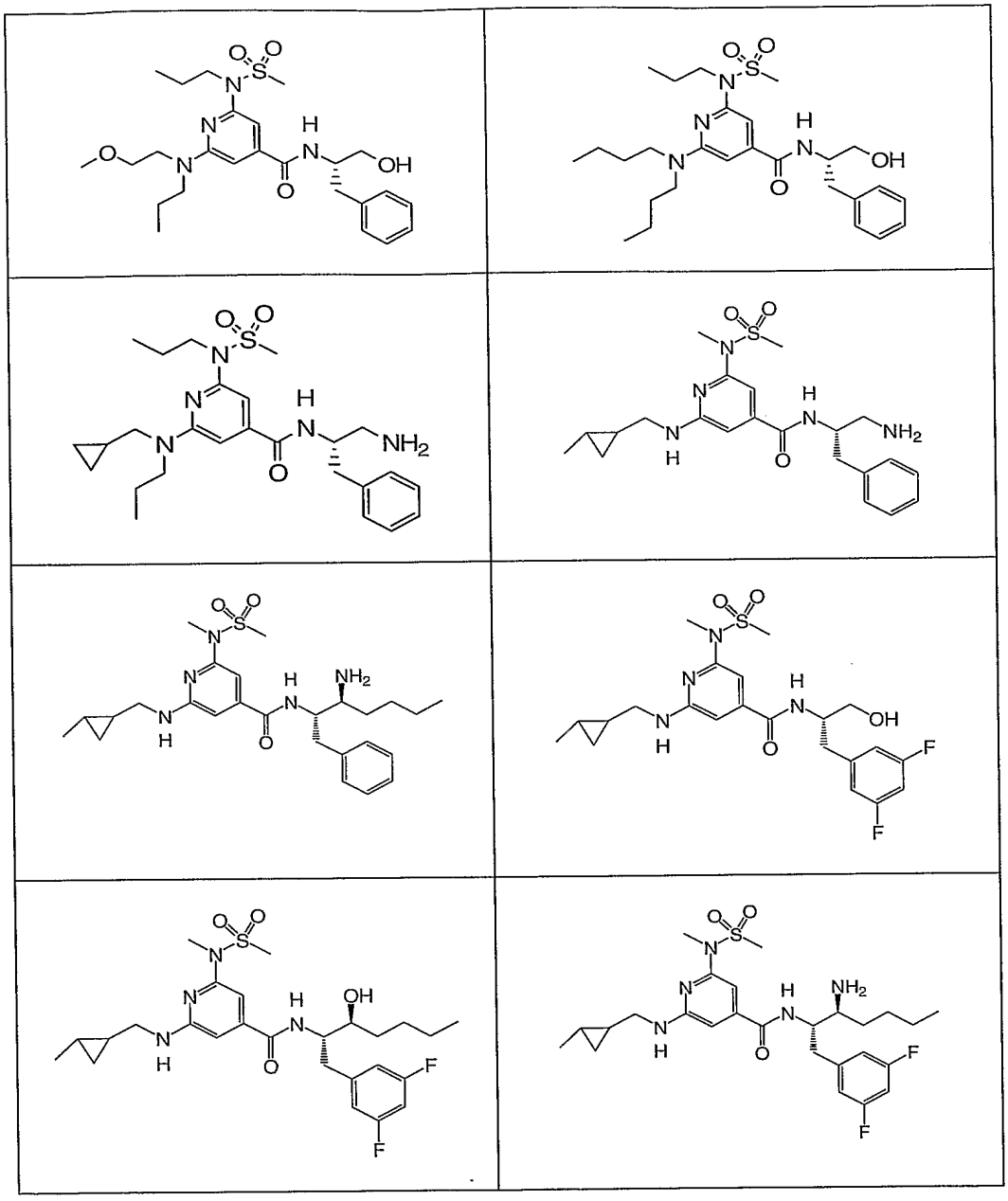
wherein Q^1, Q^2, Q^3, R^a, R^b, R^1, R^2 and m are as defined in Claim 1, and R^3 is (1) or (2) as defined in Claim 1, and pharmaceutically acceptable salts thereof.

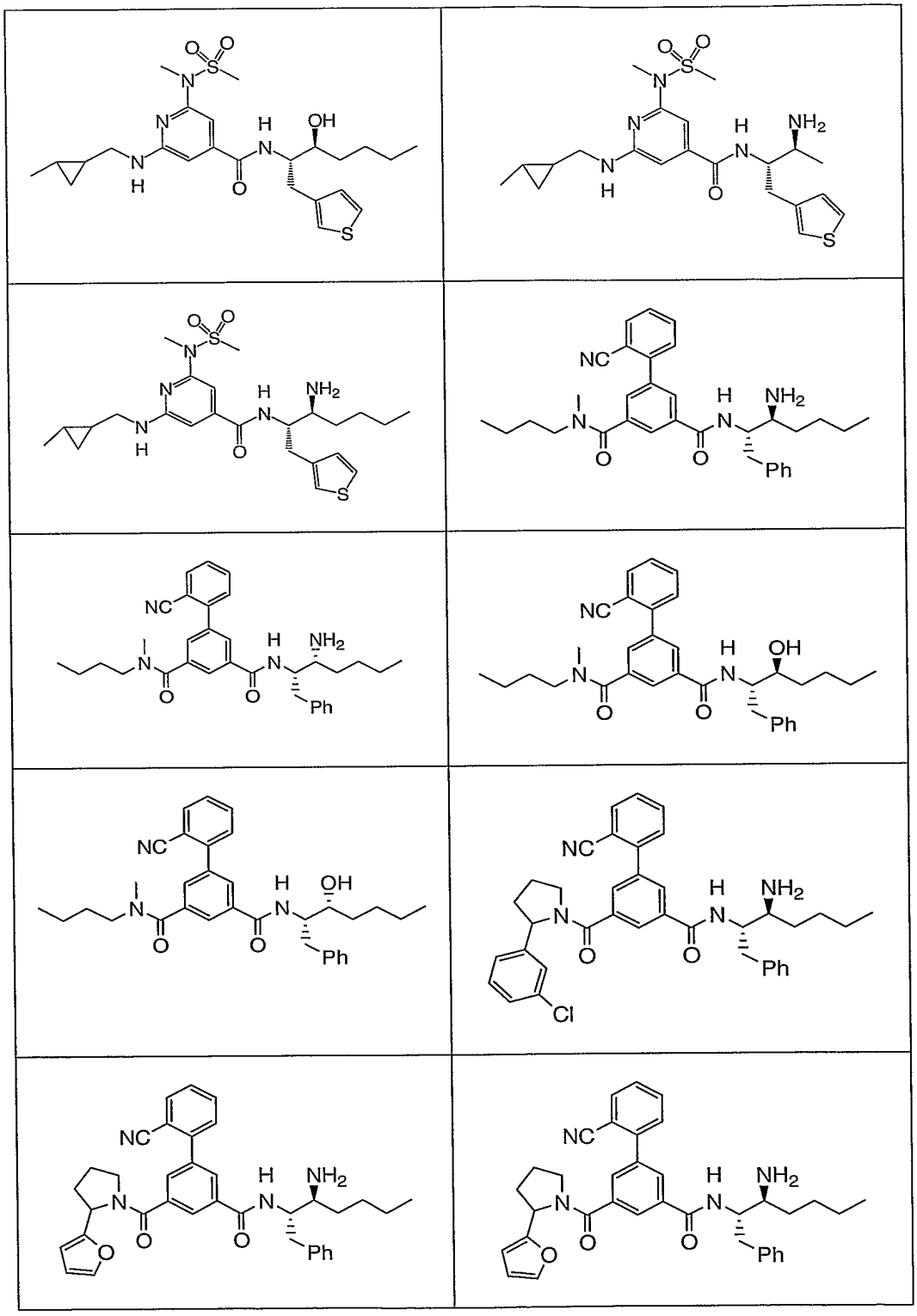
16. A compound of claim 1 is selected from the group consisting of

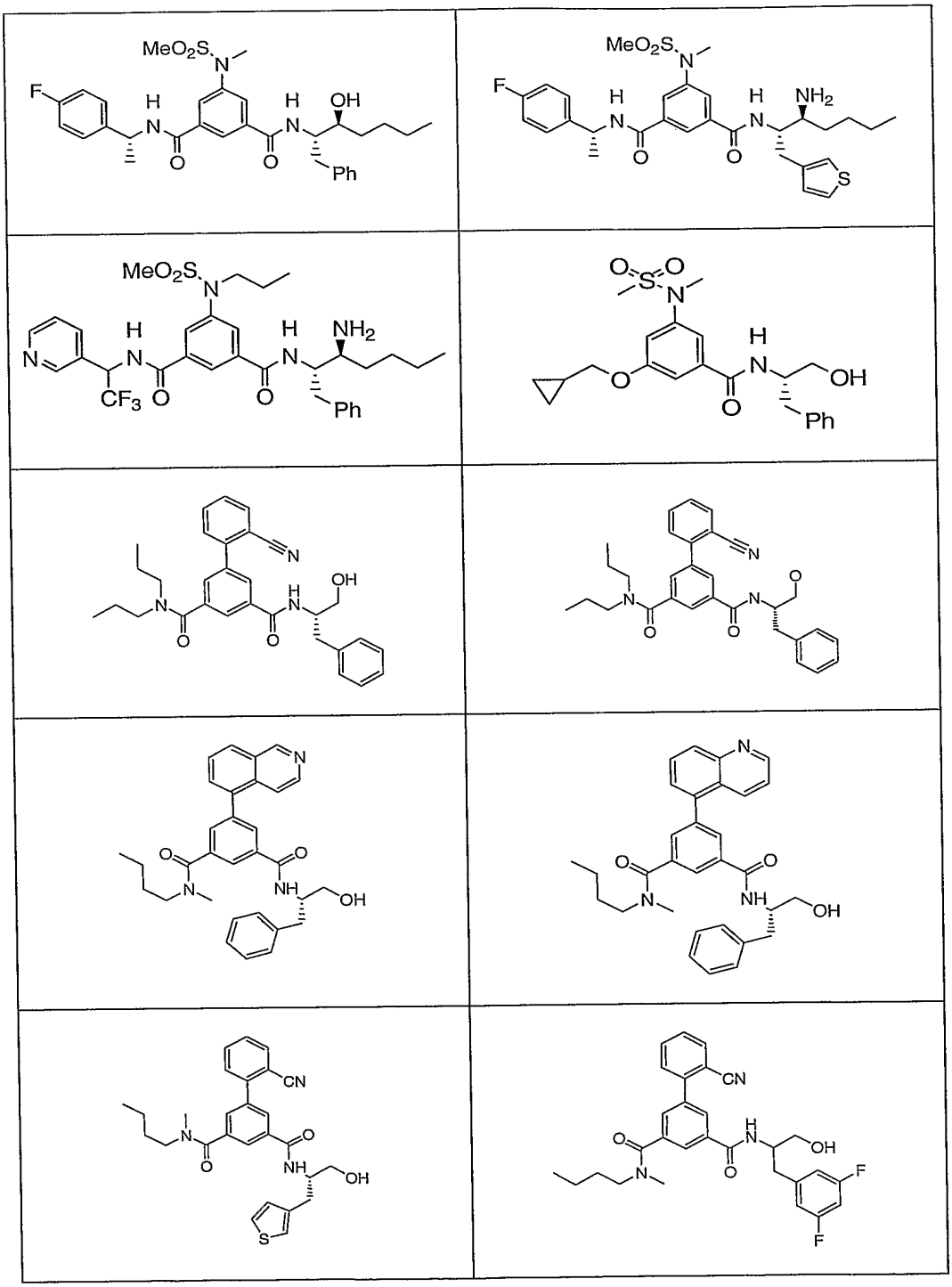


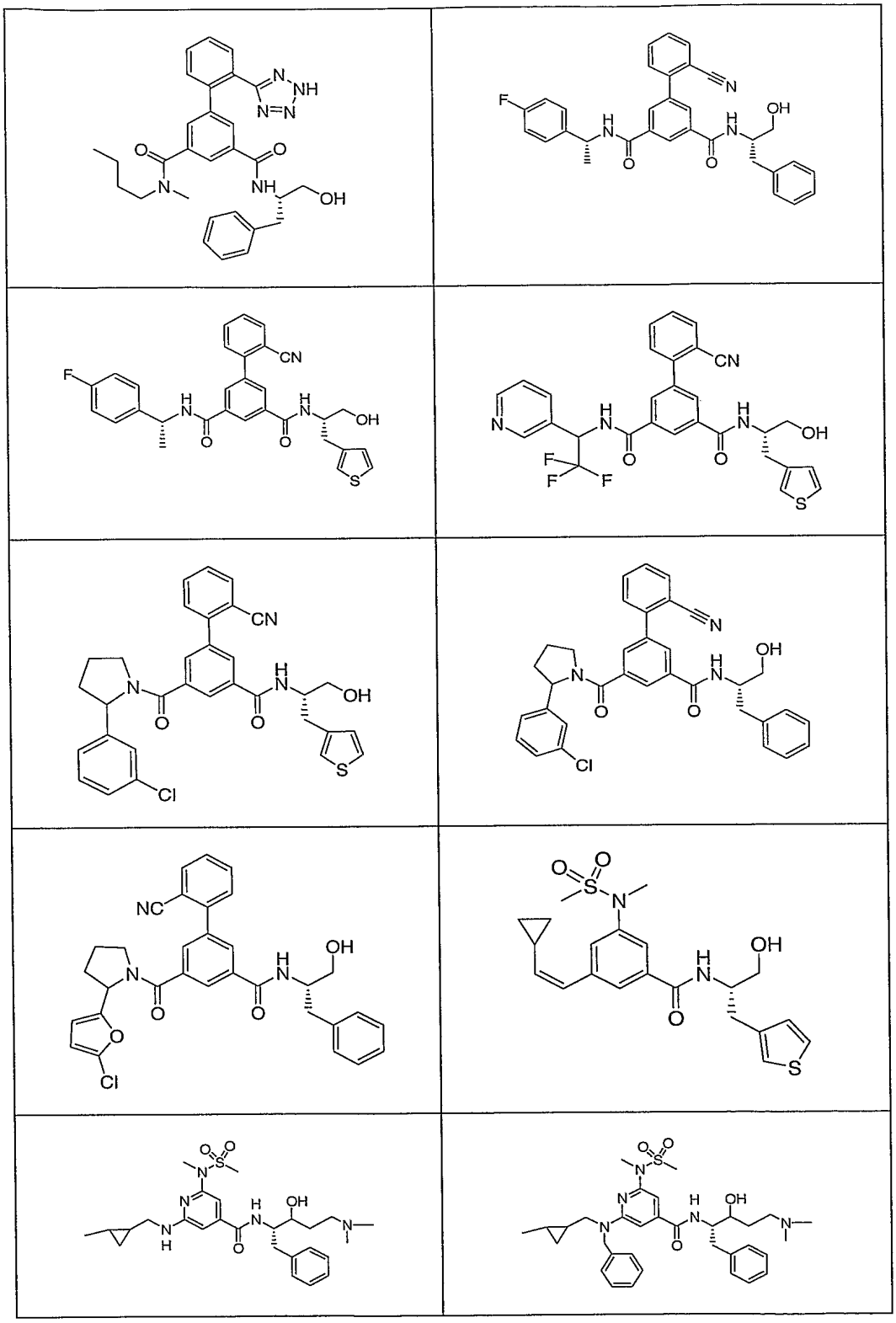


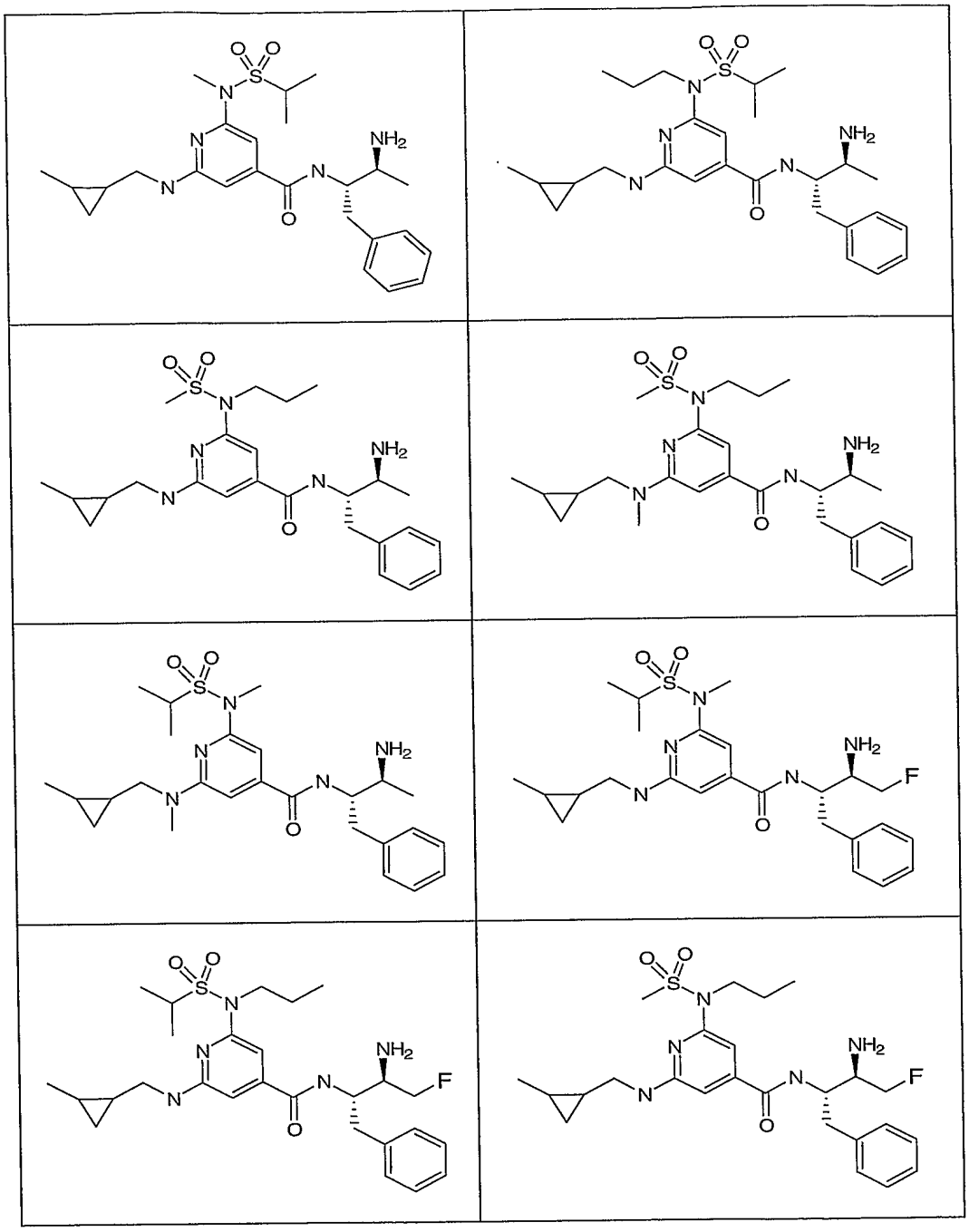


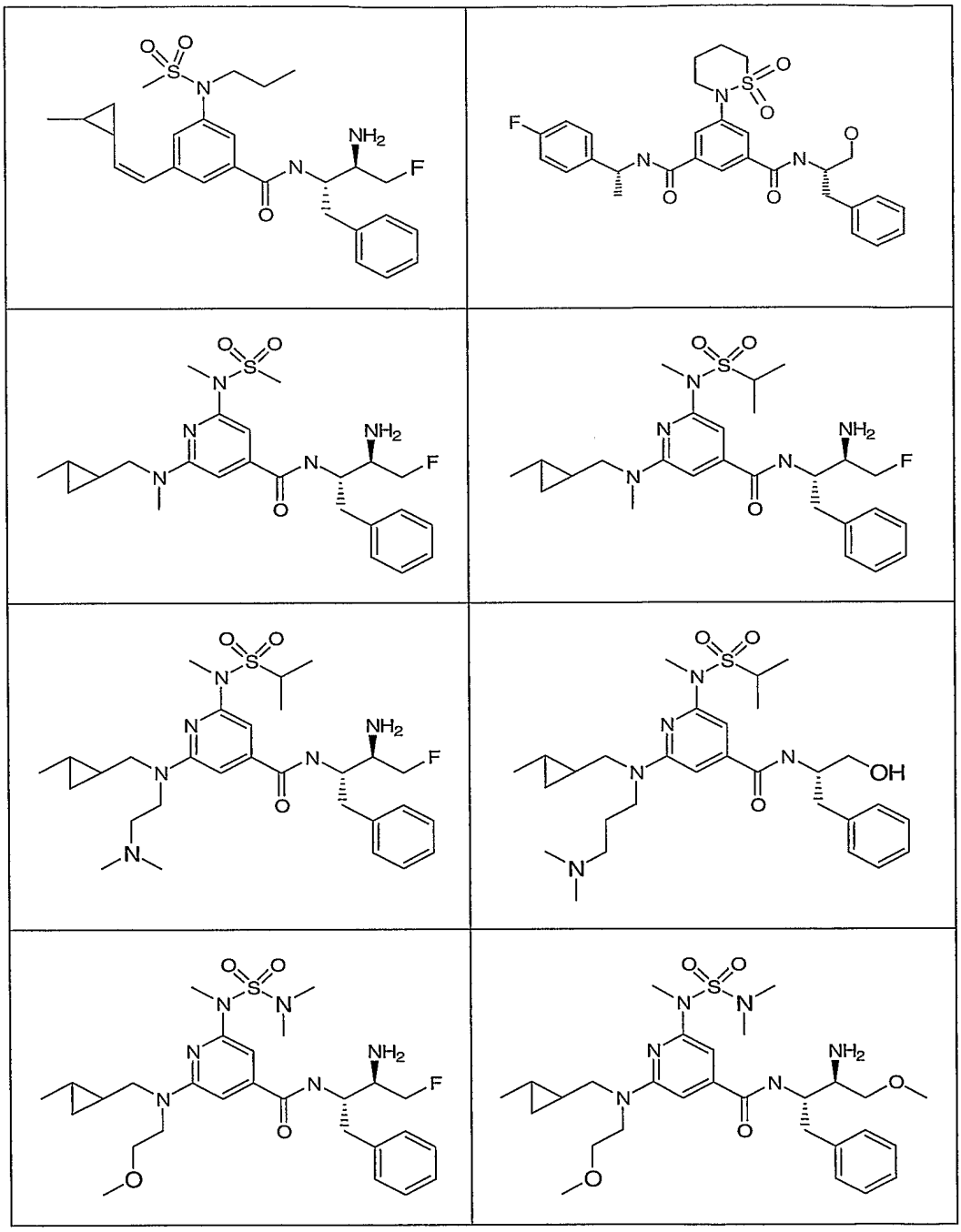


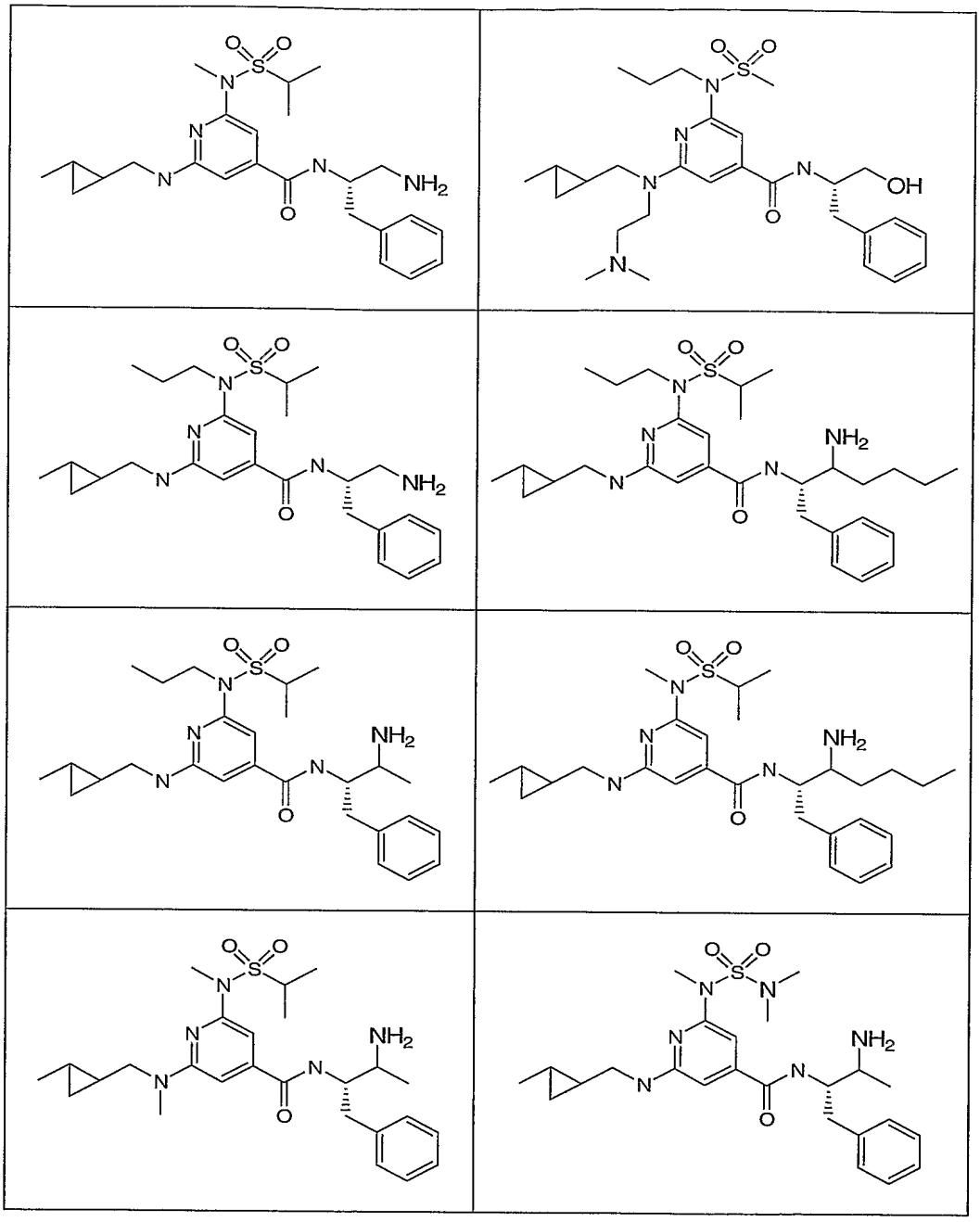


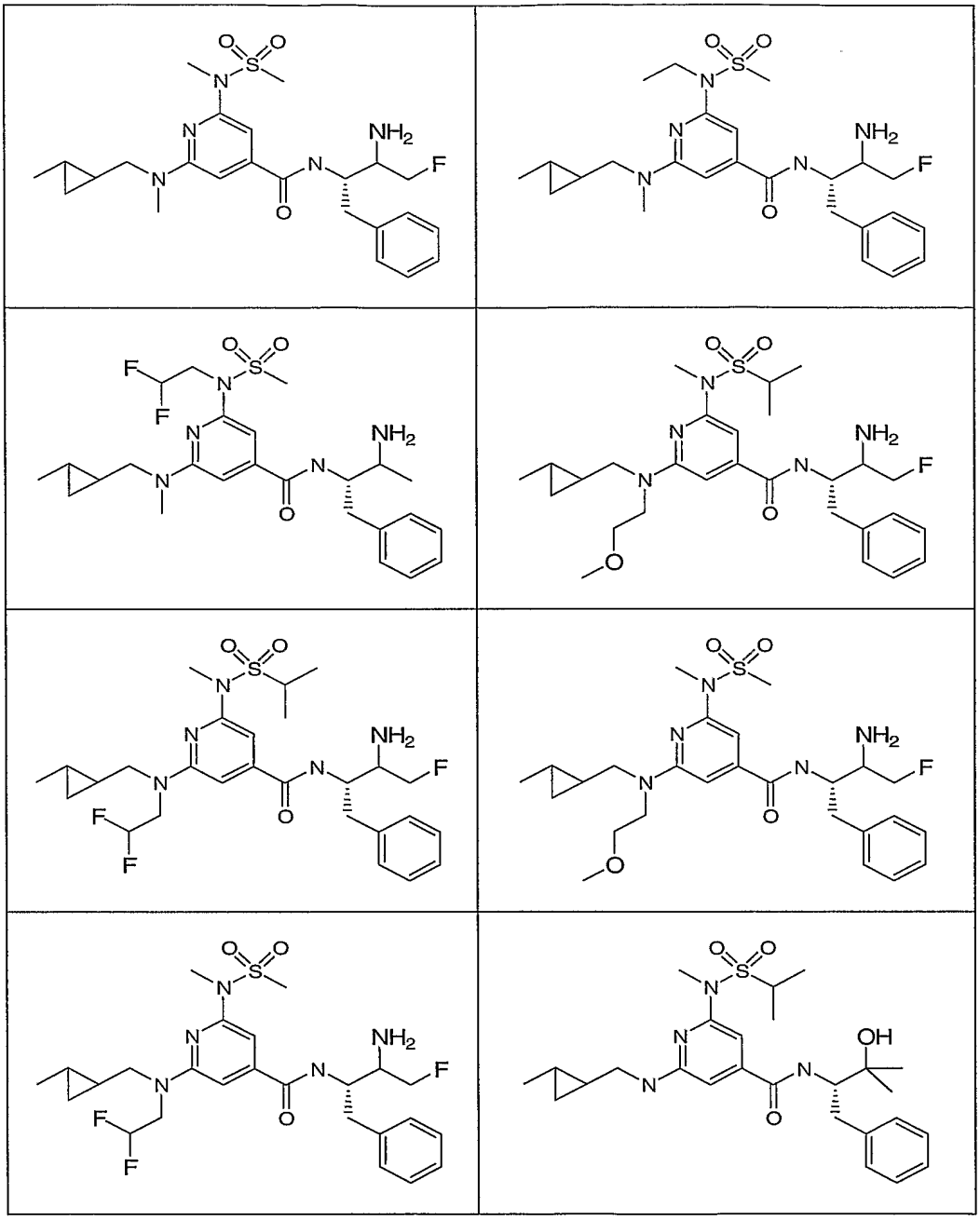


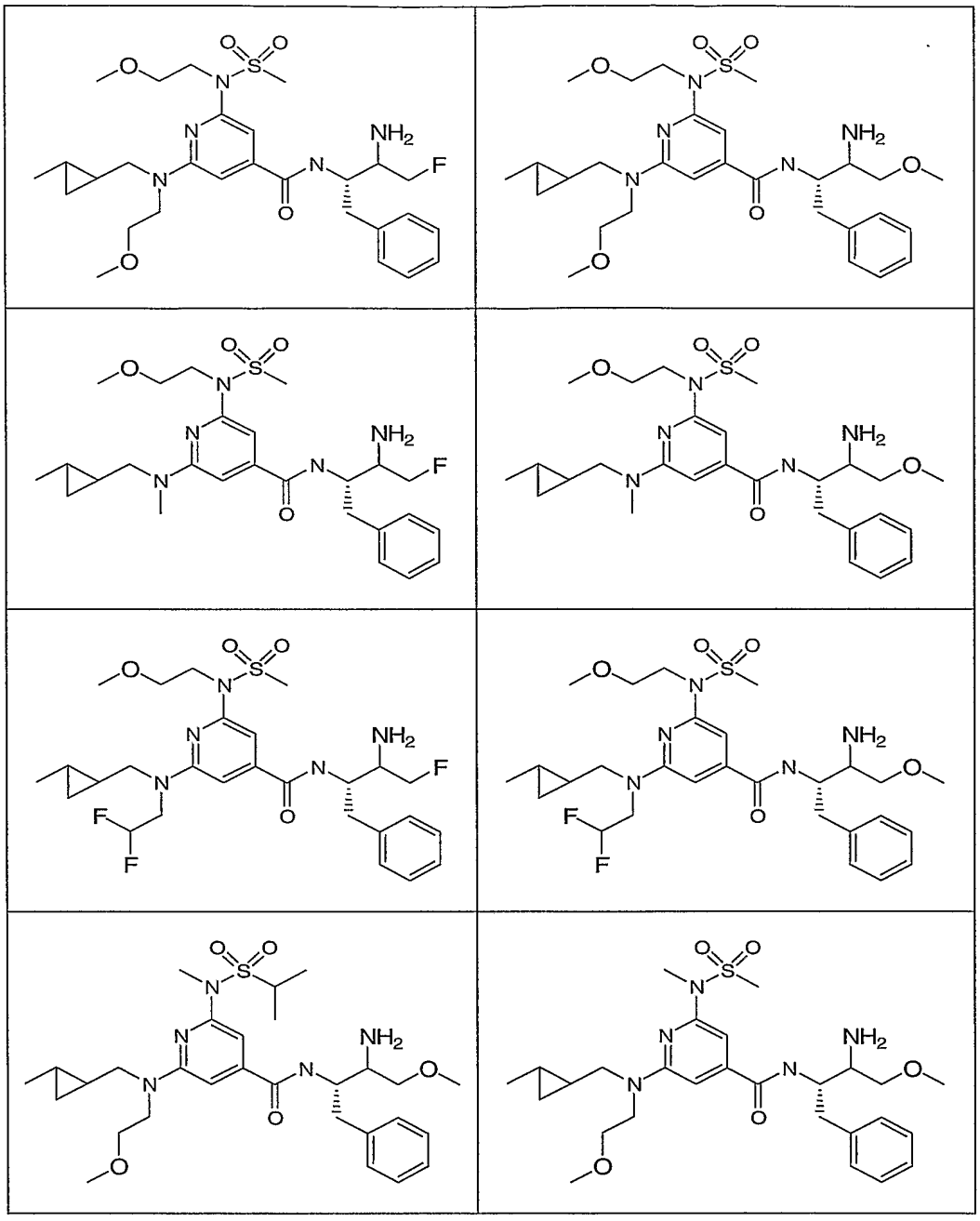


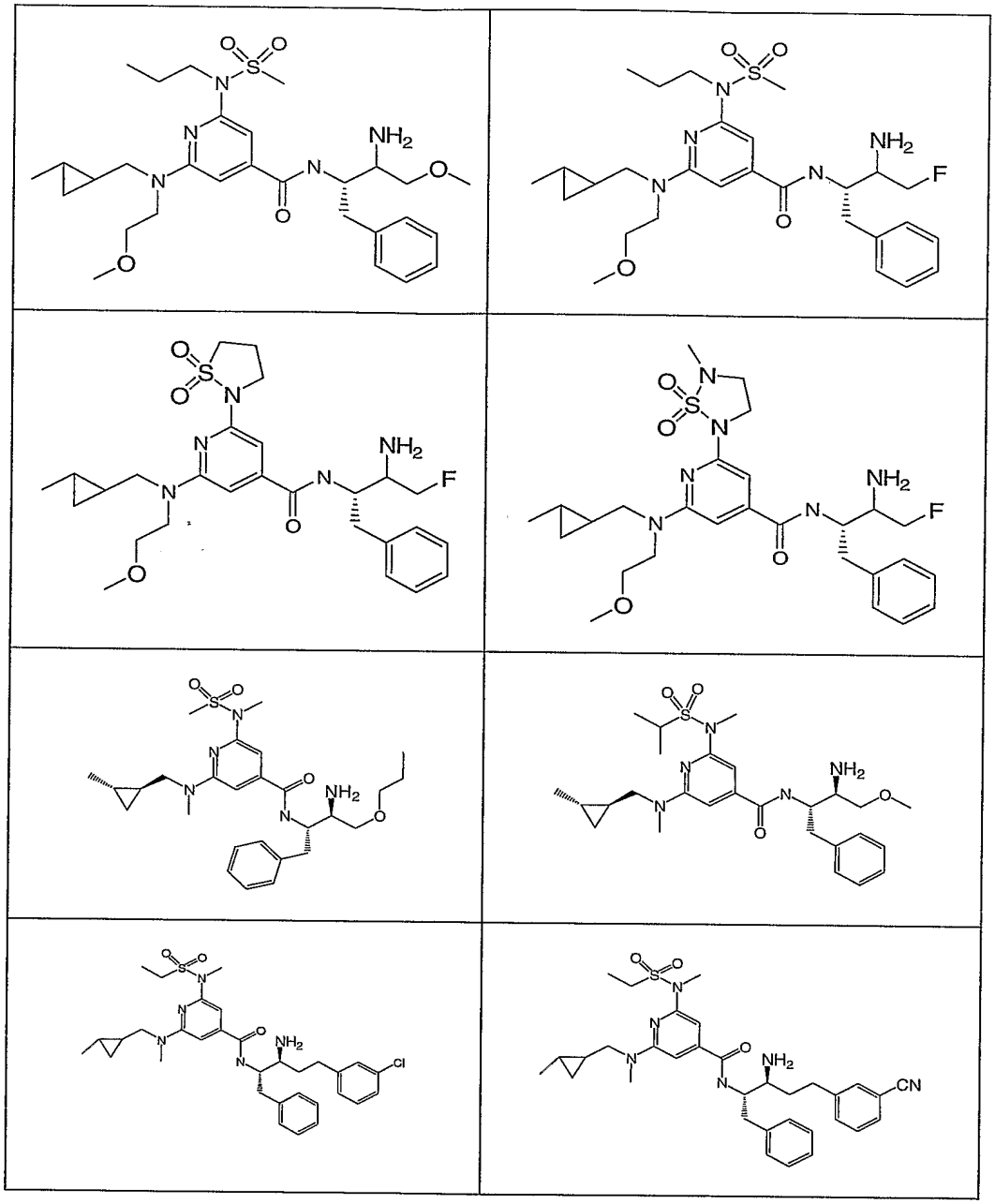


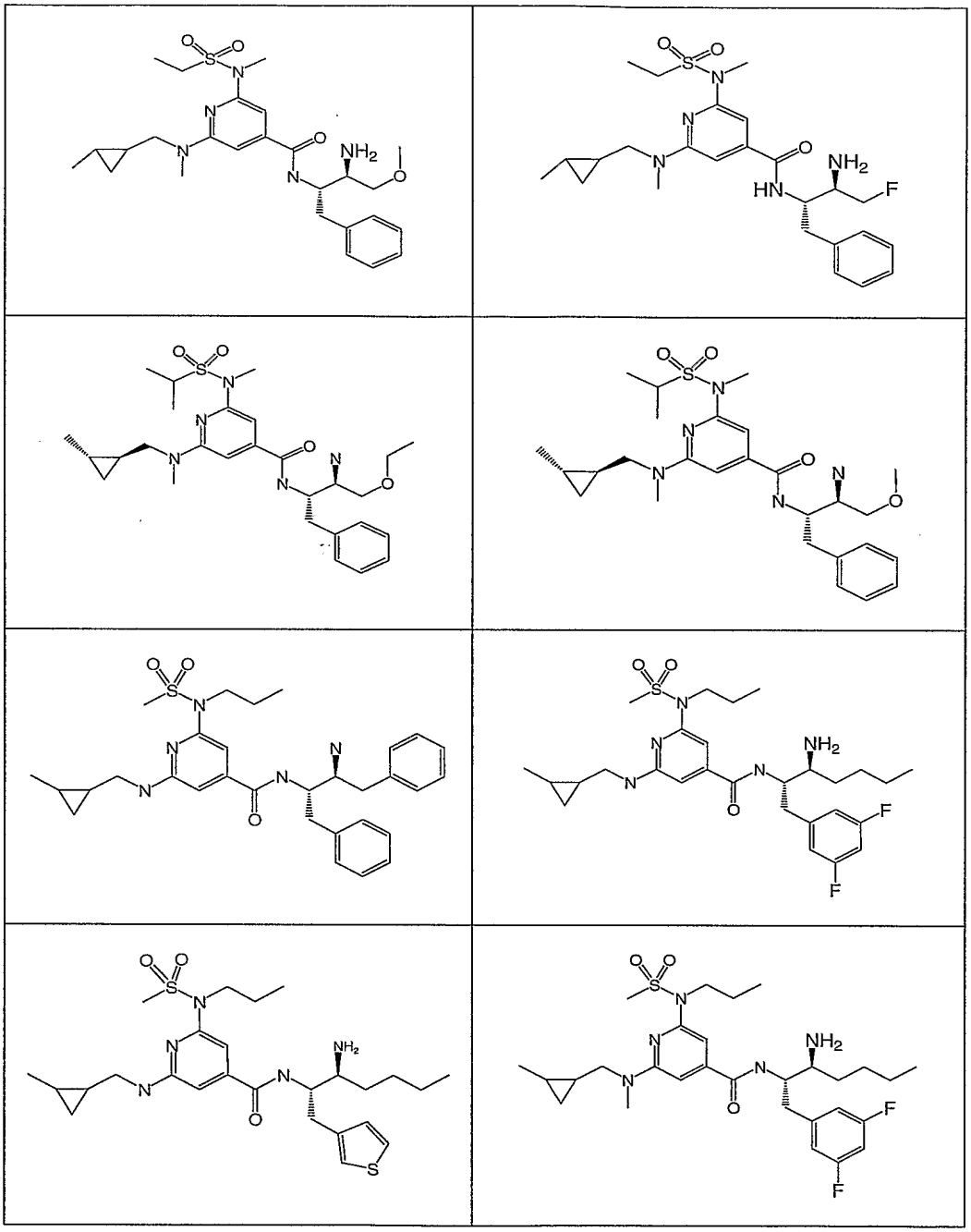


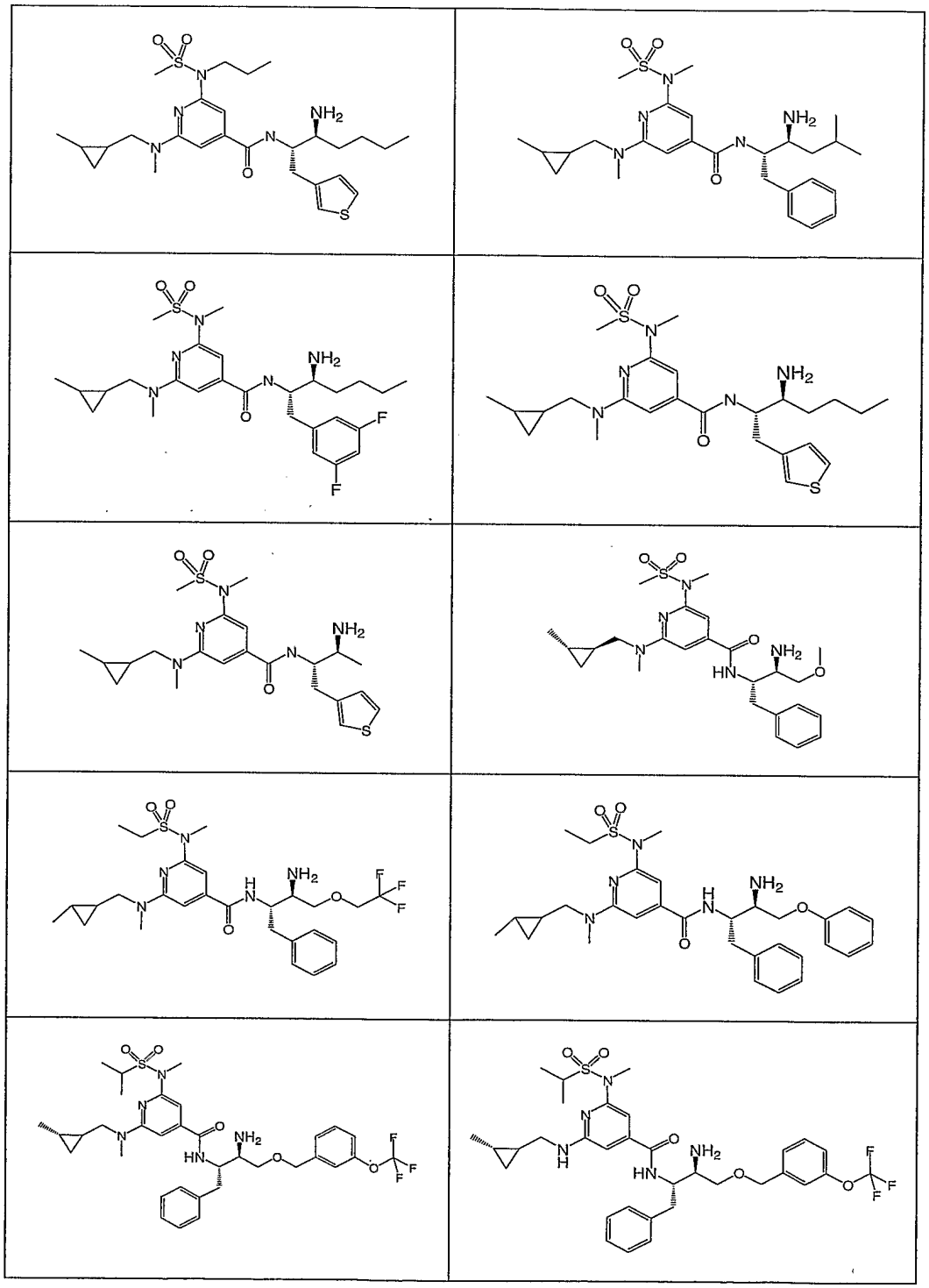


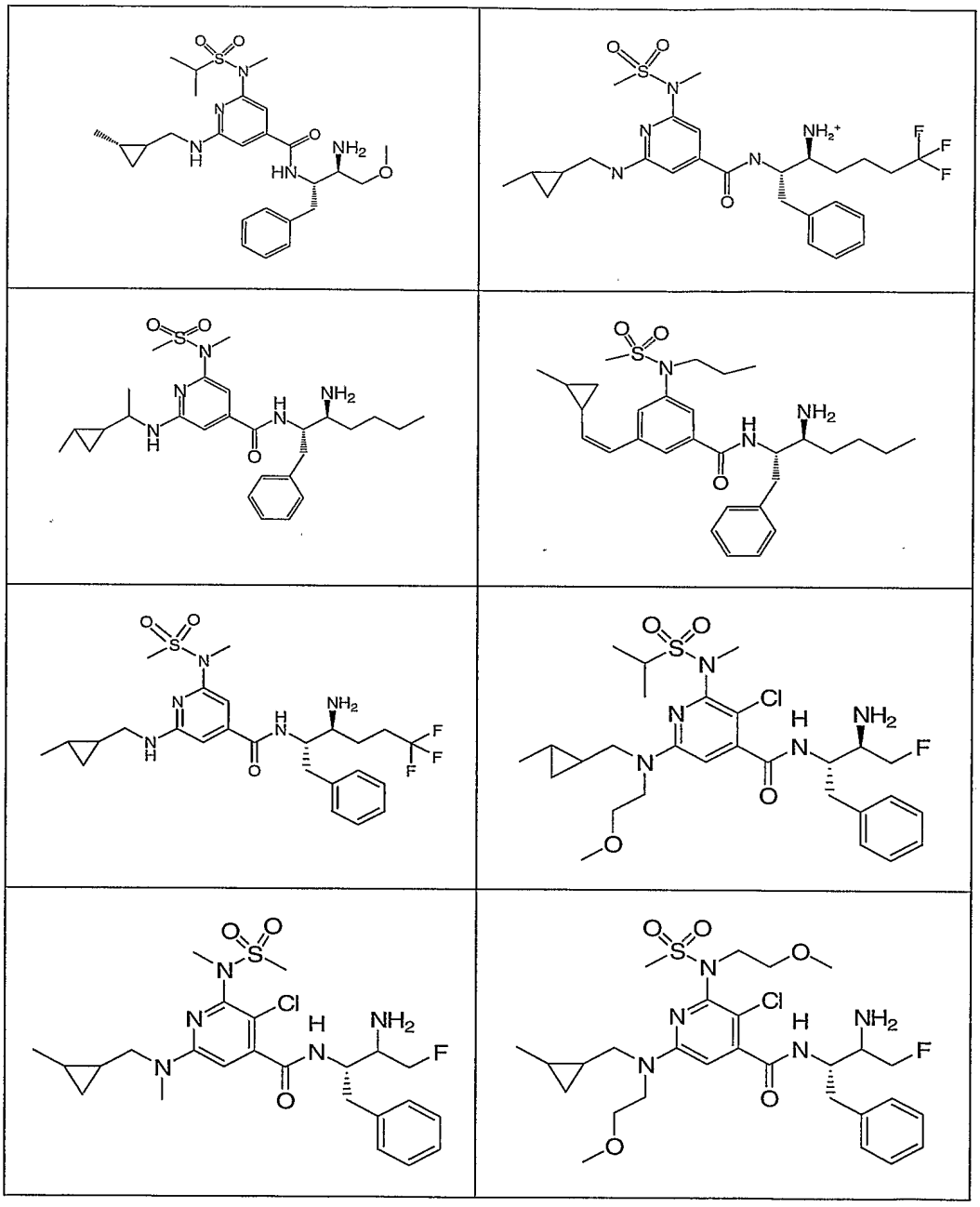


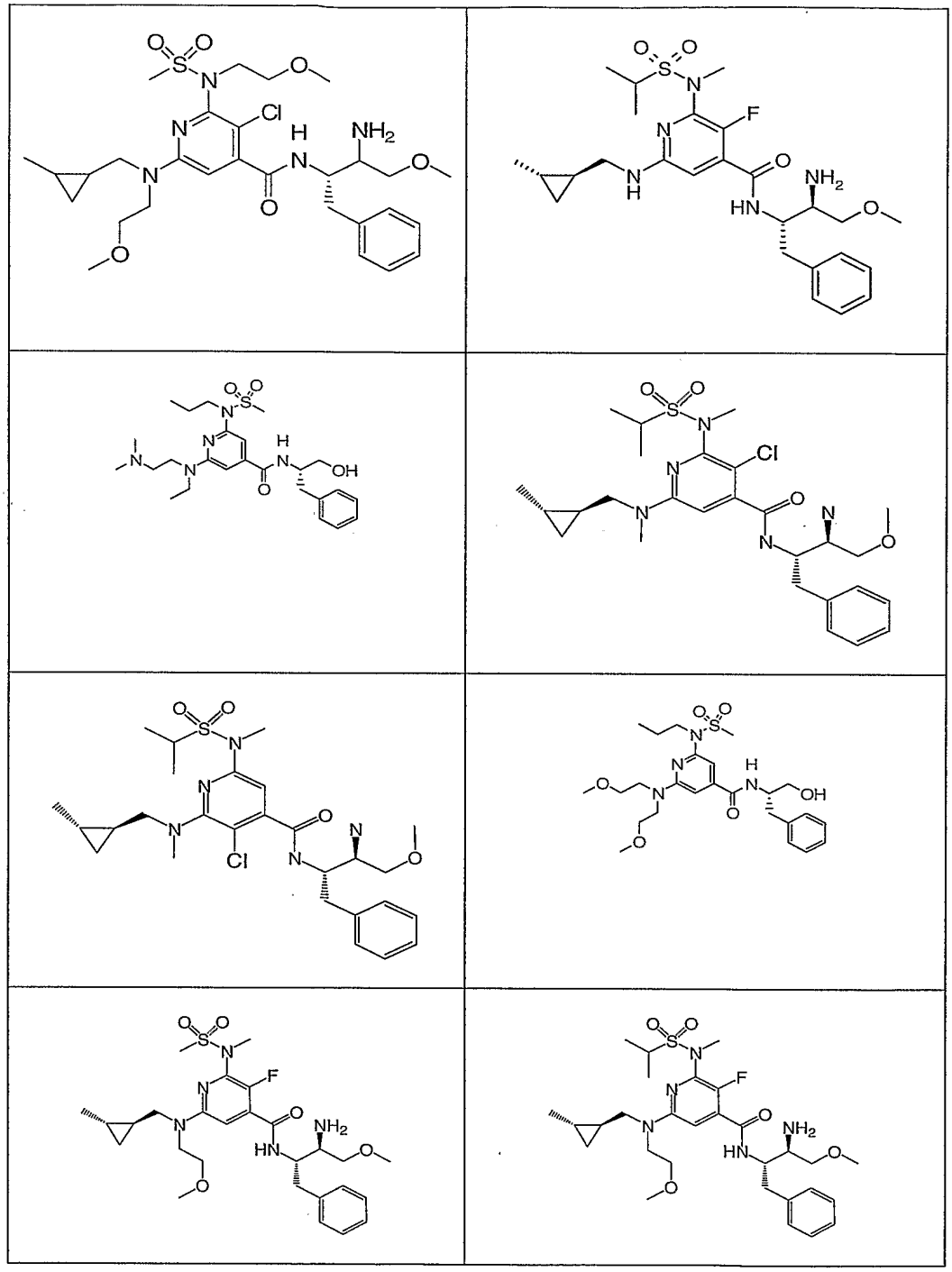












and pharmaceutically acceptable salts thereof.

17. A pharmaceutical composition comprising a therapeutically effective amount of a compound of Claim 1 and a pharmaceutically acceptable carrier.

18. A method for inhibition of β-secretase activity in a mammal in need thereof which comprises administering to the mammal a therapeutically effective amount of a compound of Claim 1.

19. A method for treating Alzheimer's disease in a patient in need thereof comprising administering to the patient a therapeutically effective amount of a compound of Claim 1.

20. A method for ameliorating or controlling Alzheimer's disease in a patient in need thereof comprising administering to the patient a therapeutically effective amount of a compound of Claim 1.